REMARKS

The Official Action and the cited references have again been carefully reviewed. The review indicates that the claims, especially as amended and in view of the newly submitted Affidavit establishing superior results over the Silverlux corrosion-resistant silver mirror construction of Roche et al., should be allowed. Reconsideration and allowance are therefore respectfully requested.

Before addressing the grounds upon which the rejections are made, a summarization of the essentials of the invention silver mirror (which retains specular optical efficiency and clarity throughout the UV and visible spectrum in a solar reflector) is given to establish better distinction between the corrosion and ultraviolet resistant silver mirror and process for making the same, compared to the silver mirror disclosed in Roche et al. in view of Schissel et al., further in view of Sugisaki et al.

In the art of the use of silver mirrors in solar reflectors, wherein silver is substantially higher in reflectivity than other metals, wherein specular reflectance over time is impared due to abrasion, weathering, and ultraviolet degradation, applicants are the first to invent a silver mirror for use in solar reflectors, in which: the measured spectral hemispherical reflectance is retained with high optical clarity through the UV and visible spectrum at near 100% reflectance where superior durability of solar weighted hemispherical reflectance % is beyond 5 years (Affidavit, FIG. A); and resistance to moisture induced delamination exceeds 60 days (Affidavit FIG. B).

The silver mirror of the invention is made by:

(a) providing a polymeric substrate;

(b) bonding a specular-reflective silver layer to said polymeric substrate;

(c.) bonding a protective layer of a transparent-film forming polymer to said silver layer; and

(d) adhering a protective shield layer that enables said silver layer to retain spectral hemispherical reflectance and high optical clarity throughout the UV and visible spectrum when used in solar reflectors, said protective shield layer incorporating a UV absorber and comprising a transparent multipolymer film of a thickness range of 2-8 mil on the protective layer.

Claims 12-13, 15-20 and 22 were rejected as being unpatentable over Roche et al. in view of Schissel et al. under 35 USC §103(a).

Applicants respectfully traverse this rejection and request reconsideration for reasons hereinafter set forth.

Roche et al. 4,645,714 imparts corrosion resistance to silver mirrors by vapor depositing silver on a polyester film and protectively covering it with a coating of transparent acrylate polymer containing a silver corrosion inhibitor such as glycol dimercaptoacetate. Upon employing a pressure-sensitive adhesive on the opposite face of the polyester film, degradation of the polyester and consequent bubbling of the adhesive is reduced or eliminated by incorporating a UV absorber in a second polymer layer covering the protective transparent acrylate polymer layer.

On the other hand, and by contrast, applicants' silver mirror structure, as shown by the results in FIG. A in the Affidavit, retains solar weighted hemispherical reflectance of close to 100% beyond 5 years compared to the conventional Silverlux silver mirror of Roche et al., which drops off precipitously at about 2 years.

Applicants have indicated in its specification from page 6, line 17 to page 7, line 13 that reference numeral 26 of FIG. 2 is the conventional Silverlux mirror of Roche et al., and that layer 17 having a thickness from 2-8 mils is the transparent multi-polymer film incorporating the UV absorber that is applicants' innovation, which is affixed to the base Silverlux mirror of

Roche et al.

In Roche et al., there is no reference to or mention of, the need for a second protective layer of a transparent multipolymer film affixed to its mirror, let alone a second protective layer of a transparent multipolymer film having a thickness of 2-8 mils.

The deficiencies discussed above in connection with Roche et al. are not supplied by any teachings in the secondary reference of Schissel et al.

Schissel et al. disclose metallized polymer mirror constructions of improved durability by virtue of having an oxide layer interposed between an outer layer of polymeric material and the reflective layer of silver, wherein the oxide acts as an adhesive layer to impede initiation of delamination as well as tunneling when delamination occurs. Even if the oxide layer of Schissel et al., which acts as an adhesive layer, is interposed between the outer layer polymeric material and the reflective layer of silver in Roche et al., applicants invention as presently defined would not result. Neither would applicants invention as presently defined in the amended claims result if the acrylic polymeric layer of Schissel were substituted for the UV containing acrylic polymeric layer of Roche et al. for the reason that applicants invention in fact affixes a second protective layer of a transparent multipolymer film to the base Silverlux material of Roche et al.

Withdrawal of the rejection is respectfully requested.

Claims 14 and 21 were rejected as being unpatentable over Roche et al. and Schissel et al., further in view of Sugisaki et al. under 35 USC §103 (a).

Applicants respectfully traverse this rejection and request reconsideration for reasons hereinafter set forth.

All of Roche et al. and Schissel et al. have been discussed above.

Sugisaki et al. is clearly non-related art in that it describes an electrostatic recording

material for an electrostatic plotter that outputs a color image in the CG (computer graphics) or CAD (Computer Aided Design) system. As much, it is insufficient to compensate for the deficiencies mentioned in connection with Roche et al. and Schissel et al. for the reason that, even though Sugisaki et al. utilizes UV absorbers in the substrate of adhesive sheet to be laminated, there would be no incentive for or reason why one skilled in the art of making silver mirrors for solar reflectors that lack sufficient solar weighted hemispherical reflectance and inadequate delamination protection to look to the non related art of electrostatic recording material – particularly the adhesive layer used therein to find a solution to minimize or eliminate inadequate solar weighted hemispherical reflectance or inhibit delamination – let alone utilize an adhesive layer containing a UV absorber from the electrostatic recording material and combine it with the layers in the silver mirror construction of either Roche et al. and Schissel et al. alone or Roche et al. and Schissel et al. in combination.

Withdrawal of the rejection is respectfully requested.

Claims 12 and 19 were objected to under 35 USC §132 on allegations of introduction of new matter; however, support for the expression transparent mult-polymer film may be found at page 5, lines 30-31 of the specification as initially filed. And, since the area density of 40-60 g/m^2 has been deleted, the issue of new matter is no longer applicable.

Claims 12-22 were rejected under the first paragraph of 35 USC 112 on allegations that these claims contained subject matter not described in the specification in a manner so as to convey possession of the claimed invention; however, in view of the amendments made to these claims, the rejection is no longer applicable.

Claims 12-22 were objected on grounds of informality because of inclusion in broad claims 12 and 19 of the expression (a transparent multi-polymer film of 40-60g/m^2); however, in

view of the amendments made to the claims, this objection is no longer applicable.

The enclosed Affidavit of unexpected results from co-inventors Randy Gee and Gary Jorgensen clearly demonstrate superior and unexpected results in solar weighted hemispherical reflectance of the silver mirror of the present invention compared to that of the Silverlux silver mirror construction of Roche et al. , in that the silver mirror construction of Roche et al. deteriorated significantly after two years upon total UV dose MJ/m2 of about 600, whereas the silver mirror construction of the present invention even after 5 years upon exposure to a total UV dose in excess of about 1700 MJ/m^2 maintained its initial solar weighed hemispherical reflectance.

Similarly, as can be seen in FIG. B of the Affidavit, the resistance to moisture induced delamination of the present invention was beyond 60 days, whereas that of ECP-305 which is a silvered polymethylmethacrylate film having a thickness of approximately 3.5 mils of the 3M company experienced total delamination prior to 30 days of water exposure time.

In view of the foregoing amendments, remarks, analysis and arguments, and in view of the affidavit establishing superior and unexpected results, it is believed that the application is now in condition for allowance and early notification of the same is earnestly solicited.

Respectfully submitted,

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